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Early Warnings Save Lives During Rare November Tornado Outbreak

—By Keli Tarp

The deadliest tornado outbreak in three years claimed 35 lives and caused extensive property damage Nov. 10-11, but emergency management officials said timely warnings saved more lives than were lost.

A total of 92 tornadoes were reported in 12 states, according to NOAA's National Weather Service.

Most of the deaths occurred in Tennessee, where 17 people were killed. Eleven people died in Alabama, five in Ohio and one each in Pennsylvania and Mississippi. A total of 21 people—more than half of those killed—died in mobile homes. Early reports indicated approximately 200 people sustained injuries.

Tornadoes were also reported in Arkansas, Florida, Georgia, Illinois, Indiana, Louisiana and South Carolina.

However, it was clear the loss of life could have been much greater. Throughout the devastated communities, officials commended Weather Service forecasters for early watches and warnings.

Monitoring the developing storm system, the NOAA Storm Prediction Center in Norman, Okla., alerted officials, the media and public to the high risk of severe weather. The forecasters went on to issue 14 tornado watches and

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Stitches Help Heal Hearts, Preserve Memories, Honor September 11 Heroes

—By Marilu Trainor

A beautiful, hand-crafted quilt sewn by two NOAA employees and other volunteers from around the nation to honor victims of the World Trade Center disaster was presented to victims' families and officials of the Port Authority of New York and New Jersey Police Department Nov. 15.

The quilt pays tribute to 38 officers who were killed in the line of duty on Sept. 11, 2001, during the attack on the center.

The two NOAA employees, based at the National Weather Service's western region headquarters in Salt Lake City, Utah, were among a group of 400 volunteer quilters who sewed seven quilts to honor the victims of the disaster.

Under the auspices of a group known as "America's 9-11 Memorial Quilts," the volunteers began work more than a year ago to preserve the memories of the more than 3,000 victims and bring healing to the hearts of the victims' families.

Andrea Bair, the Weather Service's western region climate program manager, was the team leader for the port authority quilt. She traveled to New York to present the quilt to the families and the port authority police

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New York PAPD

NOAA employee Andrea Bair presents a plaque and memorial quilt to representatives of the Port Authority of New York and New Jersey Police Department to honor port authority officers who lost their lives during the Sept. 11 attack on the World Trade Center.

Observing Deepwater Rockfishes off Southern California

—By Lisa Wooninck

The red-and-white-striped flag rockfish stands its ground, finding scant shelter among a bed of waving brittlestar arms as the 15-foot *Delta* submersible gently glides past.

Small red fish scatter behind fields of vase-shaped sponges, while a few solitary fish make failed attempts at hiding their large bodies by sticking their heads in small crevices of the rocky outcrop.

Pilot Chris Ijames guides the sub across the rocky sea floor at 400-foot depth, while I scrunch into a space the size of a steamer trunk.

This is my first dive, and the marine world at these depths is more amazing and diverse than I could have possibly imagined. When I glance through the upper porthole, I am awed by the dark shapes of schooling fish backlit by the down-welling surface light.

The lower porthole grabs my attention with an up-close view of tiny pink anemones and long spidery-armed crabs—so many creatures waving and pulsing their life force in so many directions. I can almost feel all the fish identification knowledge that I had been cramming into my brain the night before seep out of my ears from sheer sensory overload. Quickly, with my face plastered against the center porthole, I attempt to identify the fishes within six feet of the submersible's path, just as the expert rockfish biologists had done in dives before mine.

I use the lingo of rockfish biologists when rattling off the name, number and size of fish and invertebrates into a microphone linked to a digital camera. "About 50 pygmy and square spot rockfishes, five centimeters long. One flag amongst brittlestars, 10 centimeters long." My voice rises with excitement, "Oh, great! One cowcod, 60 centimeters long."

Imagine looking out a tiny window on a busy intersection recording for 15-minute periods the model, number and year of cars that drive by your limited view. That is the challenge of counting fish from a manned submersible.

After only 50 minutes of skimming the sea floor, Ijames tells me it is time to surface.

"Already?" I plead. Everyone had told me that I would not want to return. I had not been convinced of this prior to the dive, being preoccupied with fears of becoming seasick or claustrophobic. My colleagues were right though. Once you leave the ocean's surface and begin the descent, thoughts of potential maladies are replaced by a delight in the ever-changing view of surrounding marine life.

I reluctantly bid farewell to the rockfish paradise. Ijames turns the lights off and we are enveloped in darkness that turns from deep blue to turquoise as we rise to the surface.

At the surface to greet me are Mary Yoklavich and Milton Love, long-time research collaborators from the NOAA Fisheries lab in Santa Cruz and the University of California in Santa Barbara. They are the principal investigators of a recently completed research cruise in the Cowcod Conservation Areas. The 1,660-square-mile refuge, off the coast of southern California, was created in 2001 in response to intense overfishing of the economically important cowcod rockfish.

"There is a huge data gap in our understanding of how marine refuges function," said Love. "Counting fishes and assessing the habitat both inside and outside the conservation area will give us a baseline from which to compare in the future. Without initial baseline data and follow-up monitoring it will be impossible to determine what, if any, changes occur in the fish populations within and outside the refuge."

Mary Nishimoto/UCSB

A view through the submersible Delta's porthole reveals a vermilion rockfish on rocks encrusted with colorful algae.